REMARKS

The present response is filed with a Request for Continued Examination (RCE), and is to the Office Action mailed in the above-referenced case on March 22, 2004, made Final. Claims 1, 3, 4, 9, 10, 12-15 and 26-28 are presented for examination. The Examiner has maintained the rejection claim 10 under 35 U.S.C. 112, first paragraph, and has maintained the rejection of claims 12 and 26 under 35 U.S.C. 112, second paragraph, as being indefinite. Claims 1, 3-4, 10, 12-15 and 26-28 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Rekhter et al. ("Tag Switching Architecture"), hereinafter Rekhter, in view of Davie et al. ("Explicit Route Support in MPLS"), hereinafter Davie, and further in view of Semeria (" Multiprotocol Label Switching: Enhancing Routing in the New Public Network"), hereinafter Semeria. Claim 9 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Rekhter in view of Davie, further in view of Semeria as applied to claim 1, and further in view of Woodcock et al. ("Microsoft Press Computer Dictionary"), hereinafter Woodcock.

Applicant has again carefully studied the prior art presented by the Examiner in this case, and the Examiner's statements in the instant Office Action. In response, applicant herein amends the base claims to more particularly point out and distinctly claim the subject matter of applicant's invention regarded as patentable, distinguishing applicant's invention clearly and unarguably over the prior art presented, and overcoming the Examiner's claim rejections due to informalities. Applicant provides further supporting argument that the limitations recited in the claims as amended are not taught, suggested or intimated in the prior art, either singly or in combination.

The Examiner has maintained the rejection of claim 10 under 35 U.S.C. 112, first paragraph as failing to comply with the enablement requirement response to the Examiner's 112 rejection of claim 10, applicant herein cancels claim 10, and amends the language of claim 1, from which claim 10 depends, to specifically and more clearly recite wherein the logical operation is performed on either or both of a protocol field or address field in the packet of data. Applicant's specification clearly recites on page 12, that the ingress router A performs an analysis of the packet header contents to assign each packet to a physical link, involving a hash function on several fields of the IP header, or a subset

of those fields, which includes the address and protocol fields now recited in claim 1 as amended.

Claims 12 and 26 remain rejected under 35 U.S.C. 112, second paragraph as being indefinite. The Examiner maintains that the recitation in the claim of "includes a label word which defines a plurality of bits" is unclear. In the Response to Arguments section of the instant Office Action, the Examiner stated that the reference of Davie teaches that the response signal includes a label word, which defines a plurality of data bits. However, the Examiner has also stated that the recited limitation is unclear because usually in the art, the plurality of data bits define the label word, not vice versa. If, as stated by the Examiner, the reference of Davie teaches that the response signal includes a label word which defines a plurality of data bits, applicant must assume that the teaching is understood by the Examiner, and the recitation of applicant's claims must also be understood by, and clear to the Examiner.

Regarding claim 1, the Examiner has rejected the claim as being unpatentable over Rekhter in view of Davie, and further in view of Semeria. Claim 1 now specifically recites wherein the logical operation is performed on either or both of a protocol field or address field in the packet of data. The Examiner has stated that Rekhter teaches performing the logical operation on the protocol field, and that Semeria teaches performing a logical operation on the address field. After careful review of the prior art references relied upon by the Examiner, it appears that neither reference teaches that the logical operation may be performed on either or both of the protocol and address fields, as is taught in applicant's invention, and now recited in applicant's claim.

The Examiner has rejected claim 9 as being unpatentable over Rekhter in view of Davie, further in view of Semeria as applied to claim 1, and further in view of Woodcock et al. ("Microsoft Press Computer Dictionary"), hereinafter Woodcock. Claim 9 depends from claim 1 which is now patentable as amended above. Claim 9 is therefore patentable on its own merits, or at least as depended from a patentable claim.

Regarding independent claims 12 and 26, the Examiner has maintained the rejection of the claims on their merits, as set forth in the previous Office Action. The Examiner has stated in the Response to Arguments section of the instant Office Action, that Davie teaches that the response signal includes a label word, which defines a

plurality of data bits. The Examiner adds that Davie teaches inserting a LABEL object into the RESV message, and the LABEL object includes a label word which defines a plurality of data bits.

In response, applicant herein amends the language of claims 12 and 26 to specifically recite that the response signal includes a label word which defines a grouping of data bits comprising a first and second subset of data bits from a plurality of bits. For convenience, applicant reproduces claim 12 below as amended.

Claim 12 as amended now recites:

12. A method of forwarding data over a network from a source node to a destination node, comprising:

providing a subnetwork within the network having a plurality of subnetwork nodes connected by a plurality of subnetwork links, the subnetwork nodes including an ingress node and an egress node coupled to the source node and the destination node, respectively, at least one pair of subnetwork nodes being connected by a plurality of subnetwork links, the plurality of subnetwork nodes and the plurality of subnetwork links defining a plurality of subnetwork paths between the ingress node and the egress node;

forwarding a signal from the ingress node to the egress node along a route through a subset of subnetwork nodes between the ingress node and the egress node, said signal requesting a response from each node along the route; and

receiving response signals from the nodes along the route, the response signals defining a plurality of paths within the route between the ingress node and the egress node;

characterized in that a response signal includes a label word which defines a grouping of data bits comprising a first and second subset of data bits, the first subset of the defined data bits being associated with the route between the ingress node and the egress node and the second subset of the defined data bits being associated with the plurality of paths within the route, and further characterized in that the subnetwork comprises a label-switching network.

Both claims 12 and 26 now specifically recite that the response signal includes a label word which defines a grouping of data bits comprising a first and second subset of data bits from a plurality of bits. Applicant has carefully reviewed the reference of Davie, and can nowhere find any specific teaching or suggestion that the LABEL object inserted into the RESV message includes a label word which defines a grouping of data bits comprising a first and second subset of data bits from a plurality of bits. Davie teaches establishing or defining explicitly routed paths in an MPLS environment, but nowhere teaches the specific above limitation of applicant's claims. The combined art, therefore, fails to teach or suggest all of the limitations of applicant's claims 12 and 26 as amended.

Applicant's invention teaches that the response signal can include a label word which defines a number, or grouping of data bits for the label, and a certain defined portion, or subset, of the plurality of bits of the label word define the route to be used such that packets are forwarded along the correct path from node to node. The remaining bits are used to define multiple paths within the route allocated by the nodes to carry data. For an example, as described in applicant's specification on page 6, a complete label word is twenty bits long. To establish 32 paths for example, the first 15 bits (first subset) of the response label word can be used by a node to identify the route. The remaining five bits (second subset) can be used to select one of 32 possible paths within the route. The first subset of bits identifies the route, and the remaining bits forming the second subset are classified as "don't cares".

The ingress router can select one of the available allocated paths based on the source and destination of an arriving packet. For example, the ingress router can perform a hash operation on the IP source and destination fields in the IP header of the packet to produce a unique word of the same number of bits as the number of "don't care" bits in the response label. The resulting word can then be used to select one of the paths. In this example, where the five bits (second subset) are used to select one of 32 paths, a hash operation can be performed on the 32-bit source and destination IP addresses to produce a unique five-bit word, which is then used to select one of the 32 possible allocated paths. Each node router need not actually transmit the "don't care" bits backed up the route to the ingress router, only the bits used to identify around need be transferred. The system allows multiple paths to be set up simultaneously instead of requiring that each path be

set up individually, thereby saving considerable processing time, which leads to improved network operation, particularly with respect to reduced time to set up or adjust paths. The system also allows a bundled set of paths to be handled with reduced control resources, when compared to the resources required to set up paths individually, as is taught in the combined prior art relied upon by the Examiner.

In view of applicant's above claim amendments and arguments presented independent claims 1, 12 and 26 are now clearly and unarguably patentable over the prior art references provided by the Examiner, either singly or in any combination. Depending claims 3-4, 9, 13-15 and 27-28 are patentable on their own merits, or at least as depended from a patentable claim.

It is therefore respectfully requested that this application be reconsidered, the claims be allowed, and that this case be passed quickly to issue. If there are any time extensions needed beyond any extension specifically requested with this amendment, such extension of time is hereby requested. If there are any fees due beyond any fees paid with this amendment, authorization is given to deduct such fees from deposit account 50-0534.

Respectfully Submitted,
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